

**WHAT IS CLAIMED IS:**

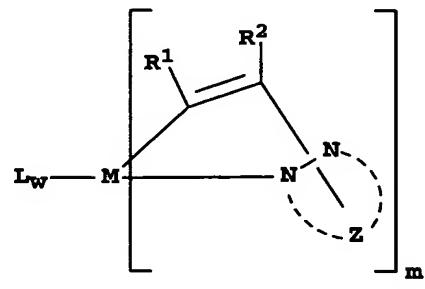
1. An electroluminescent device comprising a light-emitting layer containing a phosphorescent light emitting material that contains an organometallic complex comprising a metal selected from the group consisting of Ir, Rh, Os, Pt, and Pd and a pyrazole compound fused with at least one aromatic ring.

2. The device of claim 1 wherein the metal is Ir.

3. The device of claim 1 wherein the pyrazole compound is further substituted with a substituent that has at least one double bond.

4. The device of claim 1 wherein the pyrazole compound is further substituted with a five or six-membered aromatic ring.

5. The device of claim 1 wherein the light emitting material is represented by Formula (1):



wherein:

Z represents the atoms necessary to form a pyrazole ring group that is fused to at least one aromatic ring group;

M is a coordinated metal selected from the group consisting of Ir, Rh, Pt, and Pd;

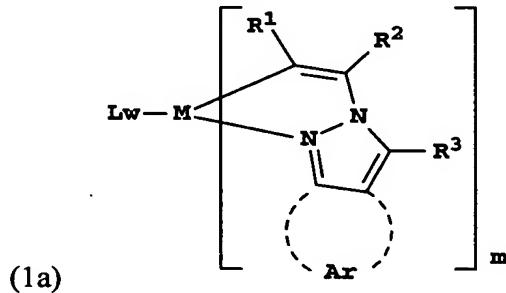
m is 1, 2 or 3 when M is Ir or Rh and m is 1 or 2 when M is Pt or Pd;

L represents an independently selected ligand group;

w is 0- 4 as necessary in order to satisfy a 6 coordination sites when M is Ir, Rh, or Os, and w is 0- 2 as necessary in order to satisfy 4 coordination sites when M is Pt or Pd; and

R<sup>1</sup> and R<sup>2</sup> represent substituent groups, provided that R<sup>1</sup> and R<sup>2</sup> may form a ring group.

6. The device of claim 5 wherein M is Ir.
7. The device of claim 6 wherein w is 0 and m is 3.
8. The device of claim 5 wherein R<sup>1</sup> and R<sup>2</sup> represent the atoms necessary to join to form a six-membered aromatic ring group.
9. The device of claim 6 wherein R<sup>1</sup> and R<sup>2</sup> represent the atoms necessary to join to form a six-membered aromatic ring group.
10. The device of claim 5 wherein the light-emitting material is represented by Formula (1a):



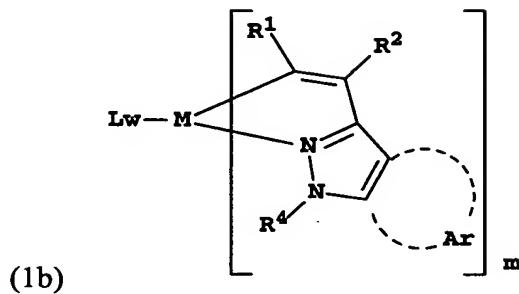
wherein:

M, L, w, m, R<sup>1</sup>, and R<sup>2</sup> are as defined in claim 5;

Ar represents the atoms necessary to form an aromatic ring group; and

R<sup>3</sup> represents hydrogen or a substituent group.

11. The device of claim 5 wherein the light-emitting material is represented by Formula (1b):



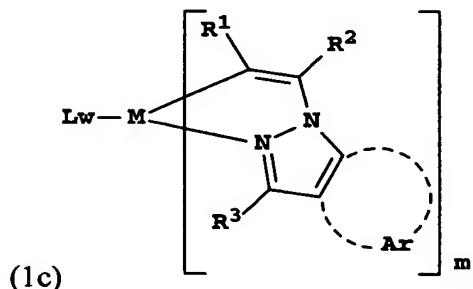
wherein:

M, L, w, m, R<sup>1</sup>, and R<sup>2</sup> are as defined in claim 5;

Ar represents the atoms necessary to form an aromatic ring group; and

R<sup>4</sup> represents H or a substituent group.

12. The device of claim 5 wherein the light-emitting layer contains a light emitting compound of Formula (1c),



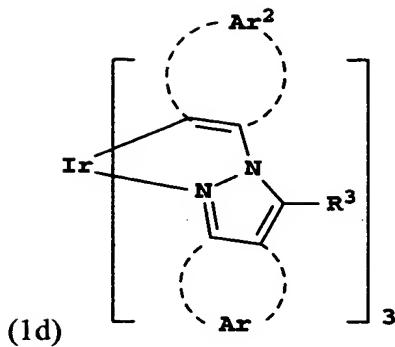
wherein:

M, L, w, m, R<sup>1</sup>, R<sup>2</sup> are as defined in claim 5;

Ar represents the atoms necessary to form an aromatic ring group; and

R<sup>3</sup> represents H or a substituent group.

13. The device of claim 5 wherein the light-emitting material is represented by Formula (1d):



wherein:

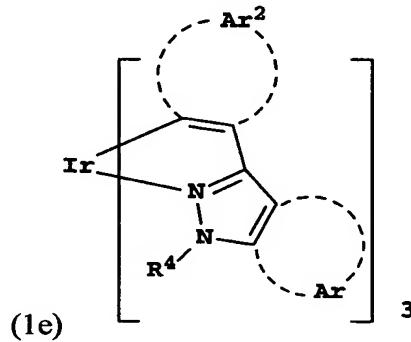
Ar represents the atoms necessary to form an aromatic ring group;

R³ is H or a substituent;

Ar² represents the atoms necessary to form a five or six membered aromatic ring group.

14. The device of claim 13 wherein Ar and Ar² independently represent the atoms necessary to form a benzene ring group and R³ represents a six-membered aromatic ring group which may include additional fused rings.

15. The device of claim 5 wherein the light-emitting material is represented by Formula (1e)



wherein:

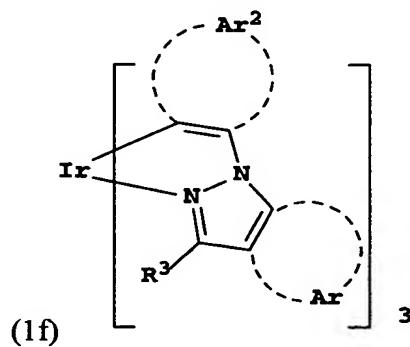
Ar represents the atoms necessary to form an aromatic ring group;

R⁴ is H or a substituent;

$\text{Ar}^2$  represents the atoms necessary to form a five or six membered aromatic ring group.

16. The device of claim 15 wherein Ar and  $\text{Ar}^2$  independently represent the atoms necessary to form a benzene ring group and  $\text{R}^4$  represents a six-membered aromatic ring group which may include additional fused rings.

17. The device of claim 5 wherein the light-emitting material is represented by Formula (1f):

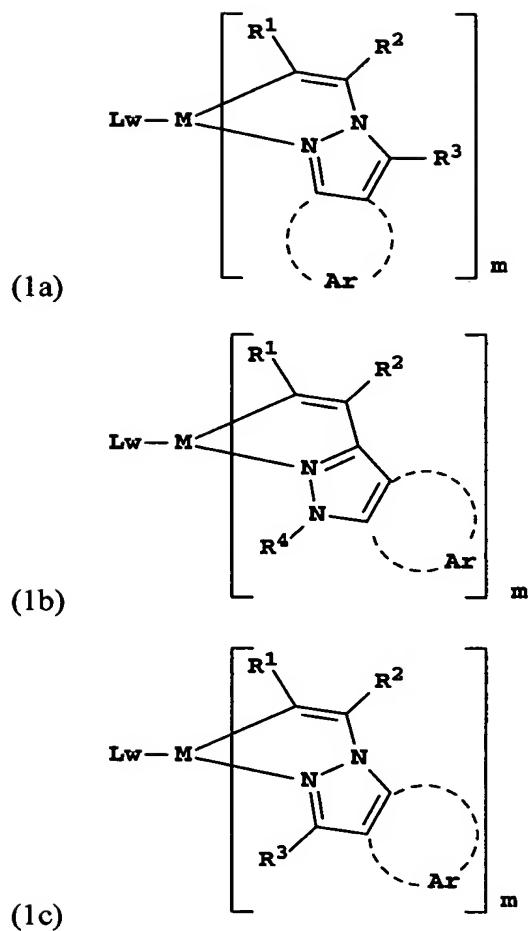


wherein:

Ar and  $\text{Ar}^2$  independently represent the atoms necessary to form a benzene ring group and  $\text{R}^4$  represents a six-membered aromatic ring group which may include additional fused rings.

18. The device of claim 17 wherein Ar and  $\text{Ar}^2$  independently represent the atoms necessary to form a benzene ring group and  $\text{R}^3$  represents a six-membered aromatic ring group which may include additional fused rings.

19. The device of claim 5 wherein the light-emitting layer contains a light emitting material of Formula (1a), (1b), or (1c),



wherein:

M is a coordinated metal selected from the group consisting of Ir, Rh, Pt, and Pd;

m is 1 or 3 when M is Ir or Rh and m is 1 or 2 when M is Pt or Pd;

L represents an independently selected ligand group;

w is 0-4 as necessary in order to satisfy a 6 coordination sites when M is Ir, Rh, or Os, and w is 0-2 as necessary in order to satisfy 4 coordination sites when M is Pt or Pd; and

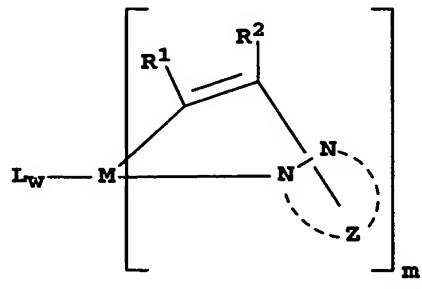
R<sup>1</sup> and R<sup>2</sup> represent substituent groups, provided that R<sup>1</sup> and R<sup>2</sup> may form a ring group;

R<sup>3</sup> and R<sup>4</sup> independently represent H or a substituent; and

Ar represents the atoms necessary to form an aromatic ring group.

20. An organometallic complex comprised of: Ir, Rh, Os, Pt, or Pd and a pyrazole compound fused with at least one aromatic ring.

21. An organometallic complex according to claim 20 represented by Formula (1),



wherein:

Z represents the atoms necessary to form a pyrazole ring group that is substituted with at least one fused aromatic ring group;

M is a coordinated metal selected from the group consisting of Ir, Rh, Pt, and Pd;

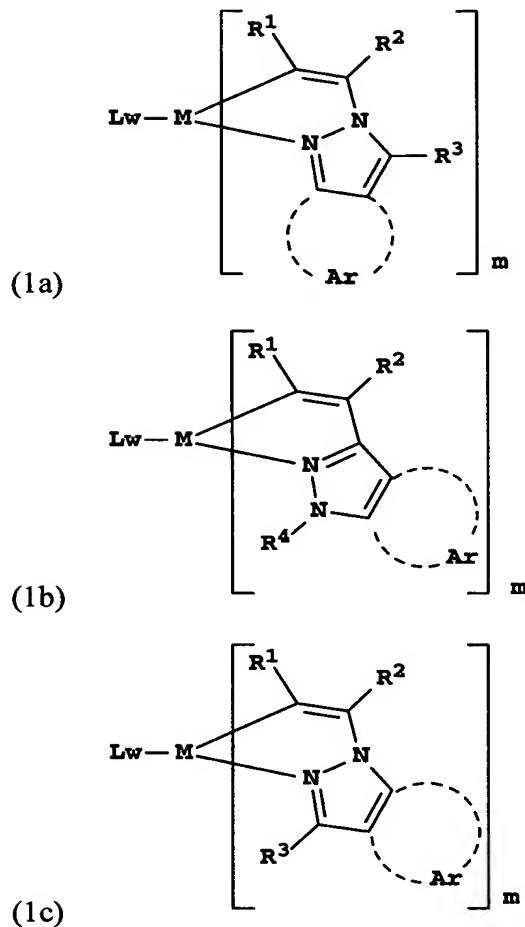
m is 1 or 3 when M is Ir or Rh and m is 1 or 2 when M is Pt or Pd;

L represents an independently selected ligand group;

the sum of w and m is 3 when M is Ir or Rh and sum of w and m is 2 when M is Pt or Pd;

R<sup>1</sup> and R<sup>2</sup> represent substituent groups, provided that R<sup>1</sup> and R<sup>2</sup> may form a ring.

22. An organometallic complex according to claim 20 represented by Formula (1a), (1b), or (1c):



wherein:

M is a coordinated metal selected from the group consisting of Ir, Rh, Pt, and Pd;

m is 1 or 3 when M is Ir or Rh and m is 1 or 2 when M is Pt or Pd;

L represents an independently selected ligand group;

w is such that the sum of w and m is 3 when M is Ir or Rh and sum of w and m is 2 when M is Pt or Pd; and

R<sup>1</sup> and R<sup>2</sup> represent substituent groups, provided that R<sup>1</sup> and R<sup>2</sup> may form a ring group;

R<sup>3</sup> and R<sup>4</sup> independently represent H or a substituent; and

Ar represents the atoms necessary to form an aromatic ring group.

23. The device of claim 1 wherein the emitting material is a dopant compound disposed in a host material.
24. The device of claim 23 wherein the dopant compound is present in an amount of up to 15 wt% based on the host.
25. The device of claim 1 wherein the light-emitting material is part of a polymer.
26. The device of claim 1 including a means for emitting white light.
27. The device of claim 26 including a filtering means.
28. The device of claim 1 including a fluorescent emitting material.
29. A display comprising the OLED device of claim 1.
30. An area lighting device comprising the OLED device of claim 1.
31. A process for emitting light comprising applying a potential across the device of claim 1.